



US Army Corps
of Engineers
Kansas City District

**KANSAS CITY DISTRICT
CORPS OF ENGINEERS**

and the

TRI - COUNTY LEVEE DISTRICT and the EGYPT LEVEE DISTRICT

Public Law 84-99 of the Flood Control Act of 1944

**Levee Rehabilitation – NEPA Review, Environmental
Assessment & Finding of No Significant Impact**

**TRI - COUNTY LEVEE DISTRICT and the EGYPT LEVEE DISTRICT
(ITEM 76 and 75A), NON-FEDERAL, EMERGENCY LEVEE
REHABILITATION PROJECT**

Missouri River

Clay, Jackson and Ray Counties, Missouri

June 2008



DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106-2896

Finding of No Significant Impact

Tri - County Levee District and the Egypt Levee District Levee Rehabilitation Project Clay, Jackson and Ray Counties, Missouri

Project Summary

The U.S. Army Corps of Engineers, Kansas City District (CENWK), in cooperation with the project sponsors, Tri - County Levee District and the Egypt Levee District (Associated Levee Districts), proposes to construct the Associated Levee Districts Levee Rehabilitation Project, under the authority of Public Law 84-99 of the Flood Control Act of 1944. Three alternatives were considered: (1) In-place repairs; (2) Landward levee setback and in place repairs; and (3) No action. Alternative 1 – In-place repairs was selected as the recommended alternative. Alternative 1 has no additional impacts when compared to Alternative 2 other than being economically more costly. Alternative 1 will involve the re-seeding of landside and riverside slopes, repairs to intermittent levee crowns and erosion areas, fill of a scour hole, reconstruction of the breached levee to its original footprint and elevation, and the replacement of sod damaged by the declared flood event of May 6, 2007. The proposed repairs are located in Clay and Ray Counties, Missouri, just downstream from the town of Missouri City, along the left descending bank of the Missouri River from River Mile 341.5 to River Mile 334.2 (Appendix I, Attachment B-2).

Alternatives

Three alternatives were considered: (1) In-place repairs; (2) Landward levee setbacks and in place repairs; and (3) No action.

Alternative 2 - Landward levee setback and in-place repairs comprise the in place repairs for intermittent crown and landside erosion and reseeding of landward and riverward slopes. Areas at levee stations 80+80 to 120+00 and 140+00 to 254+06 would; need intermittent crown and landslide erosion and partial re-seeding of landside and riverside slopes. Areas at levee station 0+00 to 352+10 would be reseeded on the landward and riverward slopes. Station 127+00 to 132+00 requires a breach repair, which was proposed as a 1,833 linear foot landward levee setback.

Alternative 3 - The "No Action" Alternative would involve no construction and the levee would remain in its damaged condition. The No Action alternative would continue to expose public and private infrastructure and agricultural croplands to a high risk level of future flooding.

Recommended Alternative

The recommended repair action, Alternative 1, consist of in-place repair of all intermittent crown and landside erosion areas (sta. 90+00 to 105+00 and 112+00 to 120+00); the repair of intermittent crown and landside erosion (sta. 120+00 to 127+00), re-seeding all intermittent locations of lost (destroyed) sod cover (sta. 0+00 to 352+10), along with repair of a levee breach (sta. 127+00 to 132+00), including fill of a scour hole and reconstruction of the levee on its original footprint and to its original elevation; along with partial re-seeding of the landside and riverside levee slopes (sta. 80+80 to 120+00 and 140+00 to 254+06) (Appendix I, Attachment D-2). Construction areas will be seeded and mulched.

Borrow Sources

The proposed levee repairs would utilize borrow from agricultural lands located riverward and landward of the levee and positioned within 500 feet of levee station 90+00 to 127+00. Approximately 80% of borrow will be obtained by removing sand deposition materials in agricultural lands down to the natural ground contours. These agricultural lands contain small depressions that were formerly wetlands. The combined total of former wetlands in the agricultural lands is 4.6 acres. The remaining borrow will be obtained from a riverside borrow area located within USFWS lands in the Jackass Bend Unit. Sediment will be removed as specified under the USFWS Special Use Permit that was obtained for this project (Appendix II) and will result in the enhancement of a 1.1 acre floodplain wetland. The borrow acquisition activities would result in the overall enhancement of 5.7 acres of wetlands combined.

Summary of Environmental Impacts

Short-term and minor impacts to agricultural land would occur under the recommended alternative. The recommended plan would result in the beneficial excavation of accumulated silt on riverward and landward agricultural lands which contain 4.6 acres of former wetlands. In addition, borrow acquisition would result in the beneficial enhancement of a 1.1 acre floodplain wetland located in the adjacent U.S. Fish and Wildlife (USFWS) Jackass Bend Unit. Flood risk management level achieved by recommended plan would be the same as the original pre-flood levees. The recommended plan will result in no impacts to Federally-listed threatened or endangered species or their habitat, nor will it result in impacts to properties listed, proposed for listing, eligible for listing, or potentially eligible for listing in the National Register of Historic Places. Areas adjacent to the levee, both landward and riverward, will be temporarily impacted by construction activities. These impacts are short-term/minor. These minor adverse effects will be greatly offset by restoring the flood risk management capability, and its associated social and economic benefits of the existing levee system. The recommended plan meets the project purpose and need of rehabilitating the flood risk management capability, and its associated social and economic benefits of the existing levee system.

Mitigation Measures

The Recommended Plan would result in no adverse long-term impacts to mitigable resources as defined under Section 404 of the Clean Water Act. However, beneficial impacts will result from borrow acquisition activities that would involve excavation of accumulated silt and removal of early successional woody vegetation from a total of 5.7 acres of former wetlands. The

identification of borrow sites was completed in accordance with the Standard Operating Procedures for the Selection of Borrow Sites Missouri River and Tributaries 1995 Levee Repair (Appendix II). These guidelines were developed through coordination with the U.S. Fish and Wildlife Service (USFWS) and the Missouri Department of Conservation (MDC) to avoid and/or minimize adverse impacts to the aquatic ecosystem to the greatest extent practicable, and where possible, take advantage of the borrow acquisition activity to enhance the aquatic ecosystem. Clearing of early successional woody vegetation and excavation which removes accumulated silt from existing wetlands and scours are considered beneficial and will enhance the overall function and value of the aquatic ecosystem. The USACE has determined in coordination with MDC and the USFWS that natural plant succession should provide adequate re-vegetation of non mast producing trees. Therefore no mitigation measures are warranted or proposed.

Public Availability

Prior to a decision on whether to prepare an Environmental Impact Statement, the CENWK circulated a Notice of Availability (Notice) of the Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI), dated June 9, 2008 with a thirty-day comment period ending on July 9, 2008 to the public and resource agencies. The Notice was e-mailed to individuals/agencies/businesses listed on CENWK-Regulatory Branch's Clay and Ray Counties and State of Missouri mailing list. The Notice stated that the EA and Draft FONSI were available on the CENWK webpage for review or that a copy of the EA and Draft FONSI could be requested in order to provide comment. One comment was received from the U.S. Fish and Wildlife Service (USFWS) by letter dated June 25, 2008. The USFWS stated that the proposed activity is not likely to adversely affect federally listed species or designated critical habitat (Appendix II).

Levee rehabilitation projects completed by the Corps under authority of Public Law 84-99 generally do not require the preparation of an Environmental Impact Statement. These projects typically result in long-term social and economic benefits and adverse environmental effects are typically minor/long-term and minor/short-term construction related. Minor long-term impacts associated with these projects are typically well outweighed by the overall long-term social and economic benefits of these projects. As described above, the recommended plan is consistent with this assessment of typical levee rehabilitation projects completed by the Corps under authority of Public Law 84-99 of the Flood Control Act of 1944.

Conclusion

After evaluating the anticipated environmental, economic, and social effects of the proposed activity, it is my determination that construction of the proposed Tri - County Levee District and Egypt Levee District, Levee Rehabilitation Project, as described in Alternative 1, does not constitute a major Federal action that will significantly affect the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date: 8/5/08



Roger A. Wilson, Jr.
Colonel, Corps of Engineers
District Commander



DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106-2896

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers, Kansas City District (CENWK), in cooperation with the project sponsors, Tri – County Levee District and Egypt Levee District (Associated Levee Districts) propose to construct the Associated Levee Districts Levee Rehabilitation Project, under the authority of Public Law 84-99 of the Flood Control Act of 1944. The proposed project would involve the re-seeding of landside and riversides slopes, repairs to breaches using earthen fill, repairs to intermittent levee crowns and erosion areas, and the replacement of lost sod as described below. Repairs are required as a result of the flood event declared on May 6, 2007.

No impacts to agricultural land would occur under the recommended plan. The recommended plan would result in beneficial excavation of accumulated silt and woody growth from historic wetlands. Flood risk management level achieved by recommended plan would be the same as the original pre-flood levees. The recommended plan will result in no impacts to Federally-listed threatened or endangered species or their habitat, nor will it result in impacts to properties listed, proposed for listing, eligible for listing, or potentially eligible for listing in the National Register of Historic Places. Areas adjacent to the levee, both landward and riverward, will be temporarily impacted by construction activities. These impacts are short-term/minor. These minor adverse effects will be greatly offset by restoring the flood risk management capability, and its associated social and economic benefits of the existing levee system. The recommended plan meets the project purpose and need of rehabilitating the flood risk management capability, and its associated social and economic benefits of the existing levee system.

The Corps circulated the EA and Draft FONSI to the public and resource agencies through a Notice, dated June 9, 2008, with a 30 day comment period, ending on July 9, 2008.

Additional information concerning this project may be obtained from Mr. Neil Bass, Environmental Resources Specialist, PM-PR, Kansas City District - U.S. Army Corps of Engineers, by writing the above address, or by telephone at 816-389-3667.

**NEPA REVIEW
ENVIRONMENTAL ASSESSMENT
&
FINDING OF NO SIGNIFICANT IMPACT**

**PUBLIC LAW 84-99
TRI – COUNTY LEVEE DISTRICT AND EGYPT LEVEE DISTRICT LEVEE
REHABILITATION PROJECT
CLAY, JACKSON AND RAY COUNTIES, MISSOURI**

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ENVIRONMENTAL ASSESSMENT
&
FINDING OF NO SIGNIFICANT IMPACT**

**PUBLIC LAW 84-99
TRI – COUNTY LEVEE DISTRICT AND EGYPT LEVEE DISTRICT
LEVEE REHABILITATION PROJECT
CLAY, JACKSON, AND RAY COUNTIES, MISSOURI**

Section 1: INTRODUCTION

This Environmental Assessment provides information that was developed during the National Environmental Policy Act (NEPA) public interest review of the proposed Public Law 84-99 Tri – County Levee District and Egypt Levee District (Associated Levee Districts) Levee Rehabilitation Project.

Section 2: AUTHORITY

The Kansas City District – U.S. Army Corps of Engineers (CENWK), in cooperation with the project sponsors, the Associated Levee Districts, propose to construct the Associated Levee Districts Levee Rehabilitation Project under the authority of Public Law 84-99 of the Flood Control Act of 1944.

Section 3: PROJECT LOCATION

The Associated Levee Districts are located in Clay, Jackson, and Ray Counties, Missouri, just downstream from Kansas City, along the left descending bank of the Missouri River from River Mile 341.5 to RM 334.2, and are described further below. The Egypt levee also extends upstream along the Fishing River (Appendix I, Attachment B-2).

The Associated Levee Districts levee segments consists of approximately 25,870 linear feet of earthen flood control works (FCW) on the left descending bank (LDB) of the Missouri River between river mile 341.5 and 337.0 in Clay County, Missouri and approximately 44,508 linear feet of earthen FCW on the LDB of the Missouri River between river mile 337.0 to 334.2 in Ray County, Missouri.

Section 4: EXISTING CONDITION

The declared flood event on May 6, 2007 caused the following damages to the Associated Levee Districts' levees:

The damages consist of one severe levee breach, intermittent crown and landside erosion, loss of sod cover on the levee embankment slopes, and lost sod cover on the levee embankment slopes at stations 127+00 to 132+00, 80+80 to 120+00, 140+00 to 254+06, and 0+00 to 352+10, respectively.

Section 5: PURPOSE & NEED FOR ACTION

The project is needed to rehabilitate the damaged levees and restore the associated social and economic benefits. The Associated Levee Districts received damages to sections of their respective levees during the May 6, 2007 declared flood event. Prior to the May 2007 event, the Associated Levee Districts' levees provided an approximately 10 years plus one foot level of flood risk management. In their current damaged state, the Associated Levee Districts levees are estimated to provide an approximately two-year level of protection. The existing condition exposes all public and private infrastructure and agricultural croplands to a high level of risk from future flooding. Failure to restore the flood risk management capability of the levee system would keep area residents livelihood and social well-being in turmoil and subject to the continuous threat of flooding until a level of flood protection is restored. Failure to reconstruct the levees could adversely affect the tax base of the counties and municipal governments and special districts, such as school districts. In addition, loss of jobs and potential losses in agricultural production on lands previously protected by the levees would also be incurred.

Section 6: ALTERNATIVES CONSIDERED BUT NOT SELECTED AS PREFERRED

Two alternatives were considered but not selected as the recommended alternative. These were Alternative 2 – Landward levee setback and in-place repairs and Alternative 3 – The No Action Alternative.

Alternative 2 - Landward levee setback and in-place repairs comprise the in place repairs for intermittent crown and landside erosion and reseeding of landward and riverward slopes. The stations 80+80 to 120+00 and 140+00 to 254+06 need intermittent crown and landslide erosion and partial re-seeding of landside and riverside slopes. The stations 0+00 to 352+10 need to be reseeded on the landward and riverward slopes. Stations 127+00 to 132+00 require a breach repair, which was proposed as a 1,833 linear foot landward levee setback.

Alternative 3 - The "No Action" Alternative would involve no construction and the levee would remain in its damaged condition. The No Action alternative would continue to expose public and private infrastructure and agricultural croplands to a high risk level of future flooding. .

Section 7: RECOMMENDED ALTERNATIVE

Alternative 1 – In Place Repairs was the recommended alternative. This alternative was more costly than Alternative 2, but the Associated Levee Districts agreed to construct this alternative at no additional cost to the government above the cost of Alternative 2.

The recommended alternative consists of in place repair of all intermittent crown and landside erosion areas (sta. 90+00 to 105+00 and 112+00 to 120+00 and 120+00 to 127+00) along with re-seeding landside and riverside levee slopes (sta. 80+80 to 120+00, 140+00 to 254+06, and sta. 0+00 to 352+00). The levee breach repair area (sta. 127+00 to 132+00) would be repaired by filling the existing scour hole and reconstructing the levee back on its original footprint (Appendix I, Site Detail A).

Borrow Sources

The proposed levee repairs would utilize borrow from agricultural lands located riverward and landward of the levee and positioned within 500 feet of levee station 90+00 to 127+00.

Approximately 80% of borrow will be obtained by removing sand deposition materials in agricultural lands down to the natural ground contours. These agricultural lands contain small depressions that were formerly wetlands. The combined total of former wetlands in the agricultural lands is 4.6 acres. The remaining borrow will be obtained from a riverside borrow area located within USFWS lands in the Jackass Bend Unit. Sediment will be removed as specified under the USFWS Special Use Permit that was obtained for this project (Appendix II) and will result in the enhancement of a 1.1 acre floodplain wetland. The borrow acquisition activities would result in the overall enhancement of 5.7 acres of wetlands combined.

Section 8: NATIONAL ENVIRONMENTAL POLICY ACT REVIEW

As part of the NEPA review for the proposed project, the CENWK circulated a Notice of Availability (Notice) of the Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI), dated June 9, 2008, with a thirty-day comment period ending on July 9, 2008 to the public and resource agencies. The Notice was e-mailed to individuals/agencies/businesses listed on the CENWK-Regulatory e-mail mailing list. The Notice informed these individuals that the EA and Draft FONSI were available on the CENWK webpage or that they could request the EA and Draft FONSI in writing, in order to provide comment. The following comments were received and evaluated from coordination of the Notice:

One comment was received from the U.S. Fish and Wildlife Service (USFWS) by letter dated June 25, 2008. The USFWS stated that the proposed activity is not likely to adversely affect federally listed species or designated critical habitat (Appendix II).

Section 9: AFFECTED ENVIRONMENT:

A variety of resources along with the related environmental, economic and social effects were considered during the development and evaluation of project alternatives. These include: noise levels; water quality; fish and wildlife; threatened and endangered species; vegetation; wetlands; agricultural lands; archaeological and historical resources; floodplain; economics; and esthetics.

The project area consists of agricultural row crop ground located on the Missouri River flood plain between river miles 341.5 and 334.2. The project area disturbance involves approximately 100 acres or less (including borrow locations) for Tri – County Levee District and approximately 5 acres or less (with no borrow locations) for Egypt Levee District. The Corps Kansas City District's Standard Operating Procedures for identification of potential borrow sites, which was developed in consultation with the resource agencies to avoid/and or minimize adverse environmental effects, would be implemented for this project if different or additional borrow sites are needed. Disturbance would impact young cottonwood and willow trees, various sedges and rushes, and agricultural fields and the itinerant agricultural weeds.

Section 10: ENVIRONMENTAL CONSEQUENCES:

Noise levels

The recommended alternative would result in minor short term construction related noise impacts. These impacts are the result of the operation of heavy machinery during project construction. These noise levels would be in addition, but similar to those produced by agricultural equipment which is routinely operated in the project area. No residences, businesses, churches, park areas or other areas sensitive to increased noise levels were identified in the project area. There is a remote chance that the noise from project construction could disturb the occasional boater on the nearby Missouri River or person(s) participating in outdoor recreation on the private land in the project area.

Alternative 2 – would result in noise impacts similar to those described above for Alternative 1.

The “No Action” alternative would produce no increase in noise levels in the project area.

Water quality

The recommended alternative would result in minor, temporary, construction related adverse impacts to water quality resulting from site runoff and increased turbidity. The minor impacts associated with the recommended plan would be avoided and/or minimized to the greatest extent possible by the implementation of Best Management Practices and measures required under the National Pollutant Discharge Elimination System (NPDES). A NPDES permit has been obtained for construction of the project and all appropriate measures will be taken to minimize erosion and storm water discharges during and after construction. The recommended plan involves work that will impact wetlands in the project area. These impacts will be minimal in nature. The placement of fill material in a Water of the United States will be permitted under General Permit (GP) -41 and the blanket 401 certification issued by the state of Missouri for such GP. Therefore, Clean Water Act, Section 401 Water Quality Certification and Section 404b1 compliance have already been acquired.

Alternative 2 – Repairs resulting from implementation of the alternative plans would result in minor, temporary, construction related adverse impacts to water quality similar to those described above. As with the Recommended Alternative, these impacts would be avoided and/or minimized to the greatest extent possible by the implementation of Best Management Practices and measures required under the National Pollutant Discharge Elimination System permit. These activities would also be covered by GP-41.

Alternative 3 - The “No Action” Alternative would have no effect on water quality.

Fish and wildlife

The recommended alternative would result in minor, temporary, construction related adverse impacts to fish and wildlife resources. The impacts to wildlife resources would be related to noise and visual disturbance during the construction activity. The impacts to fishery resources would be related to site runoff and increased turbidity.

Alternative 2 – Repairs resulting from implementation of this alternative would result in similar impacts as described above. Wildlife species would benefit from the incorporation of seven acres of previously agricultural lands into the riverward land base. Wildlife that could withstand frequent flooding would benefit the most.

Alternative 3 - The “No Action” Alternative would have minimal effects on fish and wildlife resources. These impacts would arise from flooding within the now unprotected area. Wetland species may benefit as more frequent flooding could occur in the now unprotected areas. Wetlands would likely recharge since they are now hydrologically connected to the Missouri River. Other terrestrial organisms temporarily displaced or have their habitat degraded by flooding.

Threatened and Endangered Species

The recommended alternative would have no adverse effects on any Federally-listed threatened or endangered species or their habitat. Pallid sturgeon (*Scaphirhynchus albus*) is found primarily in the Missouri River and Mississippi River. No work is proposed within the Missouri River. Indiana bat (*Myotis sodalis*) and bald eagle roost in trees that tend to be greater than 9 inches diameter breast height. The bats do so only during the spring and summer, and hibernate in caves during the fall and winter. The proposed levee work will only remove cottonwood and willow saplings at the Tri - County site. No impacts to any state listed threatened or endangered species or their habitat were identified.

Alternative 2 – Repairs resulting from implementation of this alternative would have no adverse effects on any Federally-listed threatened or endangered species or their habitat for the same reasons as described above.

The “No Action” alternative would have no adverse effects on any Federally-listed threatened or endangered species or their habitat. No impacts to any state listed threatened or endangered species or their habitat were identified.

Vegetation

The recommended alternative would be constructed on the original levee footprint. At the Tri - County site, a few isolated cottonwood and willow saplings would be cleared for borrow areas. The USACE in coordination with the US Fish and Wildlife Service has determined that removal of willows and cottonwoods from the borrow areas would restore lost functions to palustrine emergent wetlands and natural regeneration and succession will replace the lost non-mast producing trees.

Alternative 2 – Repairs resulting from implementation of this alternative would result in similar impacts as those described above. There would also be the impacts to agricultural crop fields reducing the area used for that purpose. The acres currently used to grow harvestable crops would be converted to grassed-levee slopes and an additional seven acres would be lost to isolation outside of the levee protection. The seven acres excluded from levee protection would grow up in early successional and hydrophitic vegetation.

The "No Action" Alternative could result in increases to the floodplain and to floodplain vegetation if lands are abandoned from farming due to the high risk of flooding. Overtime, successional vegetative growth could result in large expanses of floodplain forest.

Wetlands

The recommended alternative would have no long term adverse effects on wetlands. Beneficial impacts will result from borrow acquisition activities that would involve excavation of accumulated silt and removal of early successional woody vegetation from 5.7 acres of former wetlands. The borrow site will be excavated down to the limits of the original ground contours, thus restoring these former wetlands. The scour hole would be filled in but the site is too recent to exhibit wetland criteria. Additional borrow material may be needed and it is proposed that it be obtained from adjacent riverward and landward agricultural lands. The additional borrow would be removed by degrading an old ring levee. If borrow is obtained from sites other than these, it will be removed in accordance with the U.S. Army Corps of Engineers Borrow Standard Operating Procedures.

Alternatives 2 – Repairs resulting from implementation of this alternative would have similar effects on wetlands as described for the recommended alternative. However, seven acres of additional land would be placed riverward of the levee. Some wetlands would be impacted by the levee setback and the area filled by the new setback footprint.

Alternative 3 - The "No Action" Alternative could result in benefits to wetlands now unprotected by the levees. These areas would be subject to a high level of future flooding.

Agricultural Land

The recommended alternative would restore the level of flood risk management to pre-flood levels and result in short-term, minor impacts to agricultural land from the acquisition of borrow.

Alternative 2 – Landward levee setbacks and in-place repairs to the levee, would restore the level of flood risk management to pre-flood levels, and would result in a permanent loss of seven acres of agricultural land.

Alternatives 3 – The "No Action" Alternative would adversely impact agricultural activity by exposing approximately 4,767 acres of agricultural lands (4,469 acres of which are croplands) to increased flooding. This loss of agricultural production would have related impacts such as lost income, lower tax base, and decreased land value. This alternative would also expose several residences and existing infrastructure to increased flooding.

Archeological and Historical Resources

The recommended alternative would result in no effects to archaeological or historical resources. The National Register of Historic Places and the Federal Register have been checked to determine if any properties listed or proposed for listing in the National Register would be impacted by the project. In addition, the State Historic Preservation Officer has been contacted to determine if any properties eligible or potentially eligible for listing in the National Register would be impacted by the work.

In response to the Kansas City District's inquiry, the Missouri State Historic Preservation Office (MO-SHPO) provided the Kansas City District with written responses dated November 26, 2007 (Appendix II) which stated that the project, as proposed, should have no effects on properties listed on the National Register of Historic Places or otherwise identified in their files. The MO-SHPO stated that their office had no objection to implementation of the project. The Kansas City District's evaluation of potential impacts to historic properties indicates that the project would not impact any properties listed, proposed for listing, eligible for listing, or potentially eligible for listing in the National Register of Historic Places.

Alternative 2 – Repairs resulting from implementation of this alternative would result in no effects to archaeological or historical resources.

The “No Action” Alternative would result in no effects to archaeological or historical resources.

Flood Plain

The recommended alternative would restore an approximately 10+ year level of flood protection to the existing Associated Levee Districts levee system, which would equal the level that existed prior to the declared flood event of May 6, 2007. The area is located in the base floodplain and is subject to Executive Order 11988, “Floodplain Management”. In addition, since the proposed levee repair would restore this levee to its original alignment and pre-flood grade and cross section, no increase in floodwater surface elevations would occur. As the recommended plan would not directly or indirectly support more development in the floodplain or encourage additional occupancy and/or modify of the base floodplain, the Corps has determined that the recommended plan complies with the intent of Executive Order 11988.

Alternatives 2 – Repairs resulting from implementation of the alternative plans would result in similar impacts as described above for the recommended plan.

The “No Action” Alternative would continue to expose all public and private infrastructure and agricultural croplands previously protected to a high level of future flooding.

Economics

With the implementation of the recommended alternative, the levees would be restored to a 10+ year level of flood protection. Public and private infrastructure and agricultural croplands protected by the levee prior to the flood damage would continue to be protected against a 10+ year event. Economic conditions are unlikely to change from those of pre-damage levee conditions with the repair of this levee system. Project costs would be higher with the recommended plan but the Associated Levee Districts have agreed to provide a portion of the repairs as a betterment and the plan can be completed at no additional costs to the government over the estimated costs of Alternative 2.

Based on the Corps' economic analysis, Alternative 2 resulted in the same cost benefit ratio, but the sponsor preferred in place repair alternative.

Alternative 3 - The “No Action” Alternative has a zero benefit to cost ratio and would continue to expose all public and private infrastructure and croplands previously protected by the levee to

a high level risk of future flooding. People's livelihood and social well-being would remain in turmoil, subject to the continuous threat of flooding until the level of flood protection is restored. Failure to reconstruct the levee could adversely affect the tax base of the counties and municipal governments and special districts, such as school districts. In addition, loss of jobs and potential losses in crop production from lands previously protected by the levee would be incurred.

Esthetics

The recommended alternative would result in very minor and temporary adverse esthetic impacts associated with the construction activity. The human population that could potentially be affected by the activity would be expected to be very low, restricted to the occasional boater on the Missouri River or person(s) participating in outdoor recreation on the private land in the project area. Upon completion of the project, esthetic impact of the project would be the same as the original levee.

Alternative 2 – Repairs resulting from implementation of this alternative would result in impacts similar to those described above.

Alternative 3 - The "No Action" Alternative would have no effect on esthetics.

Section 11: CUMULATIVE IMPACTS

The combined incremental effects of human activity are referred to as cumulative impacts (40CFR 1508.7). While these incremental effects may be insignificant on their own, accumulated over time and from various sources, they can result in serious degradation to the environment. The cumulative impact analysis must consider past, present, and reasonably foreseeable actions in the study area. The analysis also must include consideration of actions outside of the Corps, to include other State and Federal agencies. As required by NEPA, the Corps has prepared the following assessment of cumulative impacts related to the alternatives being considered in this EA.

Historically, the Missouri River and its floodplain has been altered by bank stabilization, dams on the river and its tributaries, roads/bridges, agricultural and urban levees, channelization, farming, water withdrawal for human and agricultural use, urbanization and other human uses. These activities have substantially altered the terrestrial and aquatic ecosystem within the Missouri River watershed.

The Corps, which administers Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, has issued and will continue to evaluate permits authorizing the placement of fill material in the Waters of the United States and/or work on, in, over or under a navigable water of the United States including the Missouri River and its tributaries. These projects typically result in minor impacts to the aquatic ecosystem. The Corps, under the authority of the Public Law 84-99 Levee Rehabilitation and Inspection Program, has and will continue to provide rehabilitation assistance to Federal and non-Federal levee sponsors along the Missouri River which participate in the Public Law 84-99 Program. These projects typically result in minor short term construction related impacts to fish and wildlife and the habitats upon

which they depend. Resources typically affected by this type of project generally include, but are not limited to, wetlands, flood plain values, water quality, and fish and wildlife habitat.

Of the reasonably foreseeable projects and associated impacts that would be expected to occur, further urbanization of the floodplain will probably have the greatest impact on these resources in the future. Outside the ever expanding urban areas, there is little potential in the future for the construction of additional agricultural levees, major reservoirs, major wetland conversions, or clearing of riparian timber along the Missouri River.

The adverse effects associated with the proposed project are long-term/minor and are associated with the loss of agricultural cropland, and short term/minor and are associated with project construction. These minor adverse effects would be greatly offset by restoring the flood risk management capability and its associated social and economic benefits of the existing levee system. The PL 84-99 program is designed to merely bring the damaged levees back to pre-existing conditions (i.e., the status quo). Thus, no significant cumulative impacts associated with the proposed rehabilitation of the existing levee system have been identified.

Section 12: MITIGATION MEASURES

The Recommended Plan would result in no adverse long-term impacts to mitigable resources as defined under Section 404 of the Clean Water Act. However, beneficial impacts will result from borrow acquisition activities that would involve excavation of accumulated silt and removal of early successional woody vegetation from a total of 5.7 acres of former wetlands. The identification of borrow sites was completed in accordance with the Standard Operating Procedures for the Selection of Borrow Sites Missouri River and Tributaries 1995 Levee Repair (Appendix II). These guidelines were developed through coordination with the U.S. Fish and Wildlife Service (USFWS) and the Missouri Department of Conservation (MDC) to avoid and/or minimize adverse impacts to the aquatic ecosystem to the greatest extent practicable, and where possible, take advantage of the borrow acquisition activity to enhance the aquatic ecosystem. Clearing of early successional woody vegetation and excavation which removes accumulated silt from existing wetlands and scours are considered beneficial and will enhance the overall function and value of the aquatic ecosystem. The USACE has determined in coordination with MDC and the USFWS that natural plant succession should provide adequate re-vegetation of non mast producing trees. Therefore no mitigation measures are warranted or proposed.

Section 13: COMPLIANCE WITH ENVIRONMENTAL QUALITY STATUTES

Compliance with Designated Environmental Quality Statutes that have not been specifically addressed earlier in this report is covered in Table 1. Additional information is listed for the most pertinent statutes following Table 1. Additional information is listed for the most pertinent statutes following Table 1.

Section 14: CONCLUSION & RECOMMENDATION

Short-term and minor impacts to agricultural land would occur under the recommended alternative. The recommended plan would result in the beneficial excavation of accumulated silt on riverward and landward agricultural lands which contain 4.6 acres of former wetlands. In

addition, borrow acquisition would result in the beneficial enhancement of a 1.1 acre floodplain wetland located in the adjacent U.S. Fish and Wildlife (USFWS) Jackass Bend Unit. Flood risk management level achieved by recommended plan would be the same as the original pre-flood levees. The recommended plan will result in no impacts to Federally-listed threatened or endangered species or their habitat, nor will it result in impacts to properties listed, proposed for listing, eligible for listing, or potentially eligible for listing in the National Register of Historic Places. Areas adjacent to the levee, both landward and riverward, will be temporarily impacted by construction activities. These impacts are short-term/minor. These minor adverse effects will be greatly offset by restoring the flood risk management capability, and its associated social and economic benefits of the existing levee system. The recommended plan meets the project purpose and need of rehabilitating the flood risk management capability, and its associated social and economic benefits of the existing levee system.

Based on coordination with the resource agencies and input gained through a public interest review, as documented in this Environmental Assessment, the Kansas City District – Corps of Engineers has made a preliminary determination that the proposed project would have no significant impacts on the human environment including natural and cultural resources and Federally-listed threatened and endangered species; therefore, a Finding of No Significant Impact (FONSI) has been prepared. This NEPA decision document will be forwarded to the District Engineer with a recommendation for approval.

Section 15: PREPARERS

This EA and the associated draft FONSI were prepared by Mr. Neil Bass (Environmental Resource Specialist), with relevant sections prepared by Mr. Timothy Meade (Cultural Resources). The address of the preparers is: U.S. Army Corps of Engineers, Kansas City, District; PM-PR, Room 843, 601 E. 12th St, Kansas City, MO 64106.

Table 1
Compliance of Preferred Alternative with Environmental Protection
Statutes and Other Environmental Requirements

Federal Polices	Compliance
Archeological Resources Protection Act, 16 U.S.C. 470, et seq.	Full Compliance
Clean Air Act, as amended, 42 U.S. C. 7401-7671g, et seq.	Full Compliance
Clean Water Act (Federal Water Pollution Control Act), 33 U.S.C. 1251, et seq.	Full Compliance
Coastal Zone Management Act, 16 U.S.C. 1451, et seq.	Not Applicable
Endangered Species Act, 16 U.S.C. 1531, et seq.	Full Compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not Applicable
Federal Water Project Recreation Act, 16 U.S.C. 4601-12, et seq.	Full Compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	Full Compliance
Land and Water Conservation Fund Act, 16 U.S.C. 4601-4, et seq.	Not Applicable
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.	Not Applicable
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full Compliance
National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470a, et seq.	Full Compliance
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	Full Compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Full Compliance
Wild and Scenic River Act, 16 U.S.C. 1271, et seq.	Not Applicable
Farmland Protection Policy Act, 7 U.S.C. 4201, et. seq.	Full Compliance
Protection & Enhancement of the Cultural Environment (Executive Order 11593)	Full Compliance
Floodplain Management (Executive Order 11988)	Full Compliance
Protection of Wetlands (Executive Order 11990)	Full Compliance
Environmental Justice (Executive Order 12898)	Full Compliance

NOTES:

- a. Full compliance. Having met all requirements of the statute for the current stage of planning (either preauthorization or post authorization).
- b. Partial compliance. Not having met some of the requirements that normally are met in the current stage of planning.
- c. Noncompliance. Violation of a requirement of the statute.
- d. Not applicable. No requirements for the statute required; compliance for the current stage of planning.

Clean Water Act, Section 402

A NPDES permit was obtained and is located in Appendix II.

Endangered Species Act, Section 7

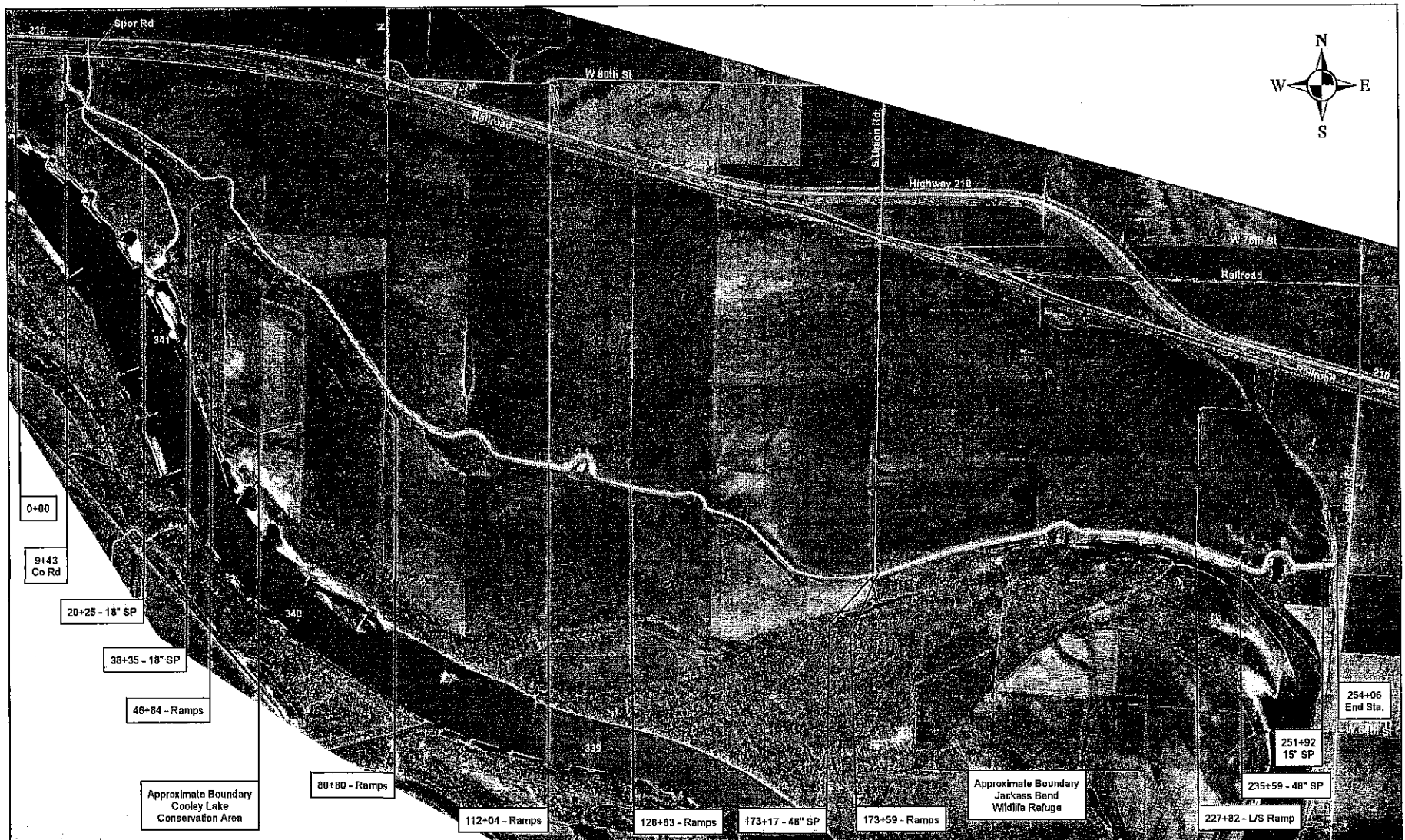
The Corps of Engineers has made a determination that no impacts to any federally listed threatened or endangered species or their habitat will occur with the project action. The U.S. Fish and Wildlife Service (USFWS) by letter dated June 25, 2008, stated that the proposed activity is not likely to adversely affect federally listed species or designated critical habitat (Appendix I).

National Historic Preservation Act

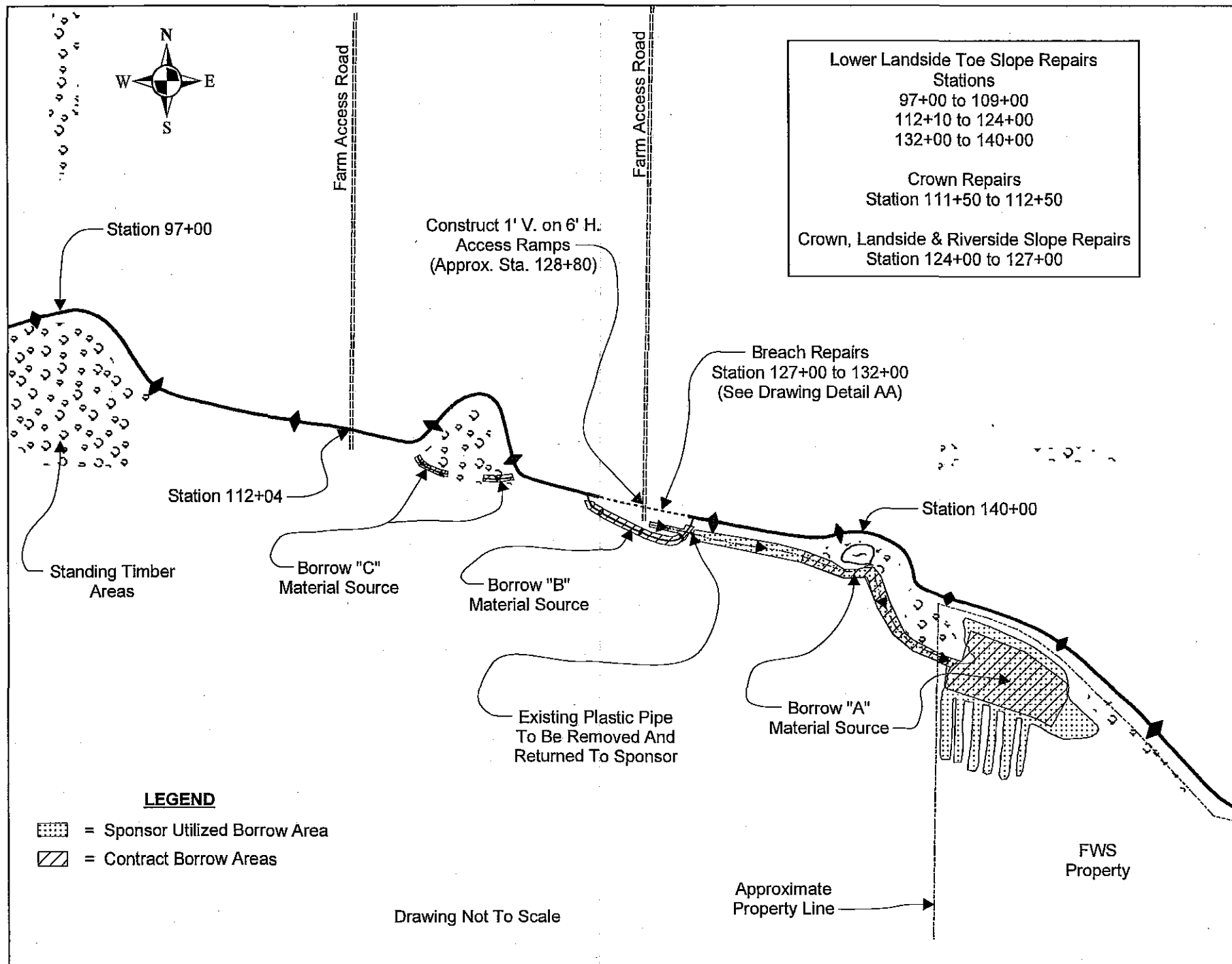
No sites listed on or eligible for listing on the National Register of Historic Places are located within or near the proposed project area. The Missouri State Historic Preservation Office (SHPO) concurred with this recommendation (Appendix II).

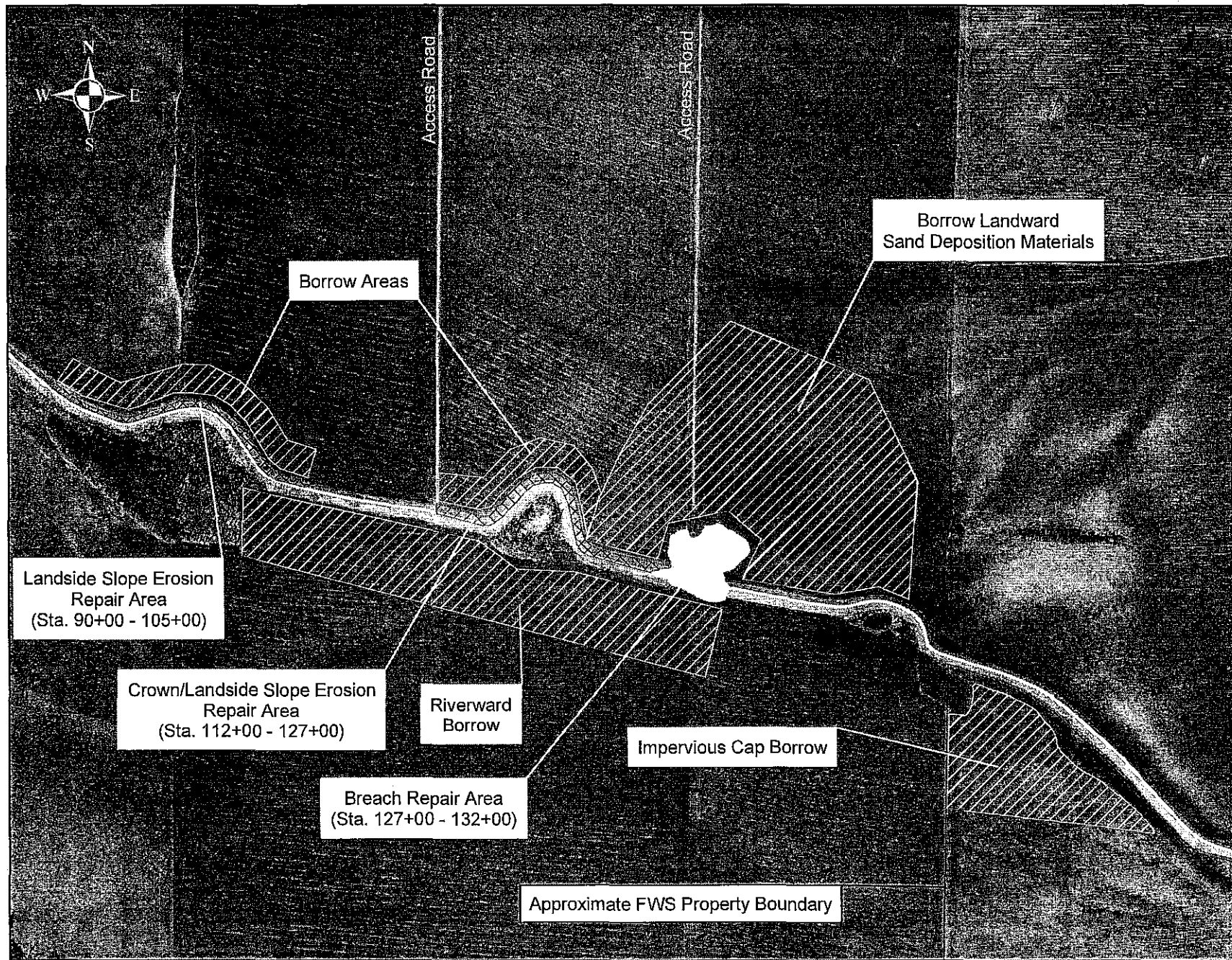
APPENDIX I – PROJECT MAPS

*Tri – County Levee District (Item 76),
Egypt Levee District (Item 75A),
P.L. 84-99 Levee Rehabilitation Project
Clay, Jackson and Ray Counties, Missouri
June 2008*



Item 76
Tri-County Drainage District of Ray, Clay & Jackson Counties



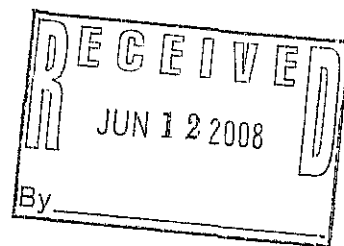


APPENDIX II – NEPA REVIEW

*Tri – County Levee District (Item 76),
Egypt Levee District (Item 75A),
P.L. 84-99 Levee Rehabilitation Project
Clay, Jackson and Ray Counties, Missouri
June 2008*



DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106-2896



REPLY TO

ATTENTION OF:

Planning, Programs and Project Management Division
Planning Branch

June 9, 2008

Charlie Scott
US Fish and Wildlife Service
101 Park DeVillie Drive, Suite A
Columbia, Missouri 65203

In accordance with provisions of the National Environmental Policy Act of 1969 (NEPA), enclosed for your review and comment is the Environmental Assessment (EA) and Draft Finding of No Significant Impacts (FONSI) for the Tri-County Levee District and Egypt Levee District, Non-Federal, Emergency Levee Rehabilitation Project.

The Kansas City District – U.S. Army Corps of Engineers, in cooperation with the project sponsors, the Tri-County Levee District and the Egypt Levee District, propose to construct the Tri-County Levee District and Egypt Levee District, Non-Federal, Emergency Levee Rehabilitation Project under the authority of Public Law 84-99, of the Flood Control Act of 1944. Under this authority, the Corps of Engineers can provide assistance to public agencies in responding to flood emergencies.

The Tri-County Levee District and the Egypt Levee District are located in the Counties of Clay, Jackson and Ray, Missouri, just downstream from the town of Missouri City, along the left bank of the Missouri River from River Mile 341.5 to River Mile 334.2. Repairs are required as a result of the flood event declared on May 6, 2007.

Written comments on the EA and Draft FONSI should be mailed to Mr. Neil Bass, Environmental Resources Specialist, Corps of Engineers, Kansas City District, PM-PR, 601 E. 12th Street, Kansas City, Missouri 64106-2896, or by phone at (816) 389-3667, or by email at neil.bass@usace.army.mil. The public review and comment period for the EA and draft FONSI will end 30 days from the date of this letter.

Sincerely,

The U.S. Fish and Wildlife Service has reviewed the subject proposal and accompanying information and determined that the activity as described is not likely to adversely affect federally listed species or designated critical habitat. Consequently, this concludes section 7 consultation. Please contact the Missouri Department of Conservation (573/522-4115) for state listed species of concern.

John M. Leduc
Field Supervisor

6/25/08
Date

William Covington
d R. Hibbs
ig Chief, Environmental Resource Section



UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Big Muddy National Fish and Wildlife Refuge
4200 New haven Road
Columbia, MO 65201

SPECIAL USE PERMIT

Station No. to be Credited Permit No.

33590 - 07-010

Date **September 10, 2007**

Period of Use (inclusive)

From **September 10, 2007**

To **December 31, 2007**

Permittee Name

Tri County Levee & Drainage District
Ray, Clay and Jackson Counties Missouri

Permittee Address

Tom Waters, President
36257 Highway Z
Orrick, MO 64077

Purpose (specify in detail privilege requested, or units of products involved)

To enter the Jackass Bend Unit of the Big Muddy National Fish & Wildlife Refuge for the purpose of removing sediment deposits for use in repair of a levee break created during flooding in spring 2007.

Description (specify unit numbers; metes and bounds, or other recognizable designations)

Sediments will be removed from the area on Jackass Bend Unit designated by mowing in August 2007. Sediment will be removed with heavy equipment that may include scrapers, bulldozers and track hoe or back hoe types. Sediment removal or other disturbance will not occur outside the designated area previously agreed upon by the Refuge Manager, the President of Tri County Drainage District and the consulting engineer for Tri County Drainage District.

Amount of fee

if not a fixed payment, specify rate and unit of charge:

- ☒ Payment Exempt - Justification: Sediment removal will result in enhancement of a flood plain wetland, furthering Refuge
☐ Full Payment
☐ Partial Payment - Balance of payments to be made as follows:

Record of Payments

n/a

Special Conditions

1. Sediment will be removed to a depth not to exceed 24 inches to avoid breaking through the fine soils to underlying sand layers.
2. Side slopes of the excavated area will be sloped at a 5 horizontal to 1 vertical ratio.
3. Any additional required permits are the responsibility of the permittee.

This permit is issued by the U.S. Fish and Wildlife Service and accepted by the undersigned, subject to the terms, covenants, obligations, and reservations, expressed or implied herein, and to the conditions and requirements appearing on the reverse side.

Permittee Signature

Michael T. Waters
Tri County Levee & Drainage District
President

Issuing Officer Signature and Title

Thomas G. Bell, Refuge Manager

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Matt Blunt, Governor • Doyle Childers, Director

www.dnr.mo.gov

November 26, 2007

Timothy Meade
Corps of Engineers, Kansas City District
700 Federal Building
Kansas City, Missouri 64106-2896

Re: Emergency Repairs, Tri County Levees and Egypt Levee (COE) Clay & Ray Counties, Missouri

Dear Mr. Meade:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which requires identification and evaluation of cultural resources.

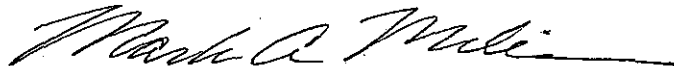
We have reviewed the information provided concerning emergency repairs to the Tri County Levees and Egypt Levee. Based on this review we concur with your recommendation that the projects are in areas of low potential or areas of previous disturbance and that there will be **no historic properties affected**. We have no objection to the initiation of project activities.

Please be advised that, should project plans change, information documenting the revisions should be submitted to this office for further review. In the event that cultural materials are encountered during project activities, all construction should be halted, and this office notified as soon as possible in order to determine the appropriate course of action.

If you have any questions, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call 573/751-7862. Please be sure to include the SHPO Log Number **(013-MLT-08)** on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE



Mark A. Miles
Director and Deputy
State Historic Preservation Officer

MAM:jd

U.S. Army Corps of Engineers, KC District
MO-R100043, Various County



Matt Blunt, Governor • Doyle Childers, Director

DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

NOV 30 2007

U.S. Army Corps of Engineers, KC District
700 Federal Building, 601 E. 12th Street
Kansas City, MO 64106

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, we have issued and are enclosing a General State Operating Permit for U.S. Army Corps of Engineers, KC District.

Please review the requirements of your permit. Monitoring reports that may be required by this permit must be submitted on a periodic basis. Copies of the necessary report forms, if required, are enclosed and should be mailed to the regional office listed below. Please contact that office for additional forms.

This General Permit is both your federal discharge permit and your new state operating permit and replaces all previous state operating permits and letters of approval for the discharges described within. In all future correspondence regarding this permit, please refer to your general permit number as shown on page one of your permit.

If you were affected by this decision, you may appeal to have the matter heard by the administrative hearing commission. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission.

If you have any questions concerning this permit, please do not hesitate to contact the Water Protection Program at PO Box 176, Jefferson City, MO 65102 (573) 751-1300.

Sincerely,

WATER PROTECTION PROGRAM

NPDES Permit and Engineering Section

Enclosure

RECEIVED
REGULATORY BRANCH
07 DEC -5 PM 2:30

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT WATER POLLUTION CONTROL PROGRAM

General Operating Permit

In compliance with the Missouri Clean Water Law, (chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.: MO-R100043

Owner: U.S. Army Corps of Engineers, KC District
Address: 700 Federal Building, 601 E. 12th Street
Kansas City, MO 64106

Continuing Authority: Same
Same

Facility Name: U.S. Army Corps of Engineers, KC District
Facility Address: 700 Federal Building, 601 E. 12th Street
Kansas City, MO 64106

Legal Description: See Page 2, Various County

Receiving Stream: See Page 2
First Classified Stream: See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein.

FACILITY DESCRIPTION All Outfalls, SIC 1629

Construction or land disturbance activity (e.g., clearing, grubbing, excavating, grading, and other activity that results in the destruction of the root zone) that are performed by or under contract to a city, county, or other governmental jurisdiction that has a storm water control program for land disturbance activities that has been approved by the Missouri Department of Natural Resources.

This permit authorizes only wastewater, including storm waters, discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System, it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law

May 31, 2007
Effective date

November 30, 2007
Issue date

May 30, 2012
Expiration date
MO 780-1481 (7-94)

Doyle Childers

Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

Edward Galbraith

Edward Galbraith
Director of Staff, Clean Water Commission

Page 2

Permit Number MO-R100043

This permit accompanies the applicant's General Permit 41 (GP0-41) for the repair of levees due to damages from flooding.

Repair activities may take place anywhere along the Missouri and Grand Rivers and tributaries thereof. Location would be in any county along these waterways from Rulo Nebraska to Saint Louis Missouri.

Detailed receiving stream information is available upon request.

**Standard Operating Procedures
for the
Selection of Borrow Sites
Missouri River and Tributaries
1995 Levee Repair**

1. Borrow Area Determination. It is the responsibility of the Corps of Engineers (Corps) to design and implement Public Law 84-99 levee repair projects that protect jurisdictional wetlands, Federally listed threatened and endangered species and their habitats (i.e., bald eagle, Indiana bat, and pallid sturgeon), and other important riverine and floodplain habitats. It is also the Corps' responsibility to complete levee repairs in a timely and economical fashion without placing undue hardship on landowners and local levee districts.

These Standard Operating Procedures (SOP) are not intended to be absolute. This document should be viewed as a flexible guideline which field personnel and borrow negotiators may apply to meet landowners, levee districts, and environmental concerns and objectives.

a. **Riverward borrow areas** in open prior converted croplands or farmed wetlands (within 1,000 feet of a levee break) and old borrow areas and scour holes that are filled with sediment are preferred borrow locations. Tree clearing will generally be avoided; however, riverward areas with woody vegetative cover of less than 9 inches diameter at breast height (dbh) may be used if prior converted croplands, farmed wetlands, or old borrow areas and scour holes are not available. Selective clearing in these wooded areas may be accomplished ~~to maintain or enhance riparian habitat. At least an 80-100 foot wide band of timber should~~ be maintained between the levee and the river bank. Riverward areas with stands of timber that died as a result of the 1993 flood event may be used as borrow sources. In these borrow areas, if possible, some large potential cavity nesting or den trees should be preserved on the edge of the borrow site, especially in localities adjacent to live forested areas. Wooded areas may be classified as wetlands and environmental regulations may apply (see Paragraph 8 - Wetlands Protection). Use of mature or dense timbered areas as borrow sites may be cost prohibitive because of the additional expense incurred to clear and grub the timber, the large amount of borrow material that would be unusable because of the undesirable woody material (roots, stumps, etc.) contained in the borrow, and the larger borrow area needed to obtain the required amount of usable material.

Riverward borrow will be used to lessen disruption to flood-protected agricultural lands; however, the levee district should be informed that use of riverward borrow may delay levee repairs because the riverward borrow areas are often wet and difficult to access. To avoid delays in awarding construction contracts, alternate landward borrow areas should also

be identified and made available for use if the riverward borrow areas are too wet immediately and prior to construction.

b. Landward borrow areas in open agricultural fields will be used as an alternative to suitable riverward areas. Landowners should be informed that the planting or presence of crops will not eliminate an area from consideration as a potential borrow site. The removal of any vegetation on the landward side to repair the levee will be subject to the same guidelines as previously outlined.

Borrow will not be taken from within 30 feet of the levee toe unless taken to repair minor sidewash damage. Borrow will not be taken from within 30 feet of the high bank of the river. The cut slopes of borrow areas in landward prior converted croplands will not be steeper than 1 vertical (V) to 3 horizontal (H) measurement unit. Riverward borrow areas should generally have steeper side slopes and be excavated to the maximum depth practical to reduce the area of disturbance and to maximize the potential for creating aquatic habitat (see Paragraph 8 - Wetlands Protection).

c. In unusual cases, levee repairs may not be feasible without the removal of trees larger than 9 inches dbh. In these situations, the borrow areas will be delineated by Corps regulatory personnel or field biologists to lessen adverse impacts and reduce the number of trees removed. Decisions concerning proposed levee repairs or borrow areas affecting one-half acre or more of timber averaging in excess of 9 inches dbh will be made in consultation with the U.S. Fish and Wildlife Service (FWS) and the Missouri Department of Conservation (MDC). The following actions will be considered during borrow negotiations to lessen impacts.

1. ~~Levees repaired along the original alignment.~~ Borrow sites in wooded areas will be small in size and scattered randomly. The size of the borrow area should remain small in relation to the size of the existing timber stand (approximately 20 percent). The depth of the borrow pit should be as deep as possible to minimize timber clearing. Where the existing riparian timber resources are narrow, borrow areas would be a minimum of 200 to 300 feet apart. A minimum band of timber 80-100 feet wide from the high bank should be maintained. Every effort will be made to avoid any dominant trees, large cavity nesting or den trees, or trees greater than 9 inches dbh. In most cases, destroyed timber mitigation will be through natural succession of borrow areas or through non-forested buffer areas around scour features or setbacks. However, if mast-producing trees are removed, replacement plantings will be considered.

2. Levees repaired with landward realignments. Where scour features were created by the flood event and the proposed remedy is a landward realignment,

landowners should be encouraged to maintain the scour feature. If the scour feature created or expanded is considered a water of the U.S., landowners will be informed that filling of the scour feature (in most cases holes) would be an adverse action and a Clean Water Act regulatory violation. However, the natural filling of the scour feature when caused by river sedimentation would not be considered a regulatory violation. Borrow material may be taken from the scour feature to create shallow water habitat. A 100 foot (average) buffer strip will be maintained between the scour feature and the reconstructed levee. Riverward borrow areas will be hydraulically connected to the scour feature if located in the immediate vicinity of the scour feature but not necessarily connected to the river.

d. The preferred borrow area for repair of minor topwash and sidewash will be agricultural fields adjacent to the levee where the damage has occurred. Borrow for severe topwash and sidewash will be designated and negotiated in the same manner as outlined above.

2. **Borrow Negotiations.** The levee district has the responsibility to furnish the borrow areas and easements required for the levee repairs. If the Levee District chooses to use the Corps recommended borrow areas, the amount of time required to negotiate and repair the levee should be reduced. The borrow site identification and negotiation process will begin during the first on-site contact with the levee district representative(s). This contact should be made prior to the borrow area assessment conducted by a Corps field biologist or borrow negotiator. An on-site meeting will take place to provide the landowners with a set of written criteria that will be used for identifying borrow (see attached **BORROW SITE SELECTION CRITERIA**). All landowners where damage occurred will be requested to be present. The criteria will be discussed and the landowners will be requested to delineate, on a map, the borrow areas they prefer. When the damage survey and field assessments are complete, a second meeting will take place with the levee district representative(s) to discuss proposed borrow areas. Again, it will be the responsibility of the levee districts' to obtain borrow area easements from landowners. The landowners that sign borrow easements will be informed by letter of any mitigation requirements (e.g., not filling scour features or borrow sites, maintaining designated buffers around borrow areas). After borrow negotiations are completed, a detailed map will be prepared defining specific borrow areas based upon the volume of material required for repairs and the criteria contained in this SOP.

3. **Damage Surveys.** Survey crews will follow a standard reporting procedure to provide data on the location of reported damage. The survey data will provide an estimate of the damage, stationing, yardage, and alternate methods of repair. Survey crews will not be responsible for any negotiations on borrow sources with the sponsor. Landowners will undoubtedly ask survey crews questions about the source of borrow, but they should be told to contact their levee district point-of-contact representative.

4. **Cultural Surveys.** The 1993 Midwest flood event Programmatic Agreement for cultural resources compliance for Public Law 84-99 projects is still in effect and will be followed for repair of projects damaged by the 1995 flood event. Many areas were surveyed for cultural resources and cleared with the Missouri State Historic Preservation Officer (SHPO) during the 1993 flood event levee repair effort. Maps/cultural resource assessments prepared for 1993 levee repairs will be utilized to the greatest extent possible.

Cultural resources field work/surveys will not be required in proposed construction work areas or borrow sites if no known sites are present and any of the following apply: (1) excavation depth in agricultural fields is not greater than 8 inches; (2) the subject sites were cleared for cultural resources for the 1993 flood event repair work; (3) subject sites are located within the boundaries of old river channels as shown on Corps' maps of the historic Missouri River channel; or, (4) borrow and/or construction activity remains 150 feet away from any visible structure or building remains.

Cultural resources surveys will be required if there is a potential for cultural resources, such as, but not limited to, areas where the above conditions do not apply, where construction or borrow activities are adjacent to or on the bluff, if there is a known archeological site nearby, or the area was not surveyed in 1993.

However, coordination with the SHPO will be conducted for every levee, as required by the Programmatic Agreement. In those instances where cultural field work is required, the ground surface must be visible, i.e., not inundated, before the area may be surveyed for cultural resources materials.

5. **Field Survey.** Potential borrow areas (both landward and riverward) within 1,000 feet of levee damage and scour features, and any landowner-identified "preferred" borrow areas outside this band, will be evaluated and mapped during the initial site visit. Significant environmental and cultural resources features, including mature trees, wooded wetlands, farmed wetlands, and potential cultural resource sites, will be accurately outlined and labeled on the map.

6. **Fish and Wildlife Agency Coordination.** This SOP was coordinated with the FWS and the MDC prior to any borrow designation or negotiation. The FWS and MDC have been provided with a list of levees to be repaired and a set of floodplain maps with highlighted levees. Further coordination will take place on a case-by-case basis if mitigation for the loss of mast-producing trees is warranted or when proposed actions would impact one-half acre or more of trees averaging greater than 9 inches dbh. The agencies will be contacted to discuss appropriate mitigation and/or a proposed mitigation action. The FWS and the MDC will also

be invited to assist and advise the Corps in periodic management and field reviews of the application of this SOP.

7. Toxic and/or Hazardous Substances. The Environmental Protection Agency (EPA) provided a database list of known releases, storage, and/or disposal of toxic and/or hazardous substances (Toxic Release Inventory, National Priorities, etc.) within the State of Missouri. In the application for assistance or the initial site visit, the levee district representative (usually the president) will be asked to provide a list (with addresses) of known businesses, factories, feedlots, etc., where spills may have occurred. This information will be used, along with field surveys, to verify the presence of hazardous substances. The presence of toxic and/or hazardous substances will eliminate a site from borrow consideration.

8. Wetlands Protection. Most wetland borrow areas will be located in prior converted croplands, farmed wetlands, and adjacent to riparian habitat. Naturally vegetated wetlands will be avoided. If naturally vegetated wetlands or riparian timber are impacted, appropriate mitigation will follow. The following is a list of conditions/stipulations that will be used for borrow activities in wetlands and in riparian habitat with wetland potential.

a. Farmed wetlands riverward of the levee should be dug as deep as possible, and, where applicable, connected to scour features, if present. The borrow areas should be configured so that one side has a slope of 1V:4H; the other slopes may be as steep as 1V:1.5H. Landward farmed wetlands can be dug to any depth and must have 1V:5H maximum side slopes. Farmed wetlands used for borrow should not be back filled.

b. Any uniform stand of timber that died as a result of the 1993 flood event may be used for borrow without mitigation for loss of riparian timber. However, riverward areas with stands of timber that died as a result of the 1993 flood event may be used as borrow sources. In these borrow areas, if possible, some large potential cavity nesting or den trees should be preserved on the edge of the borrow site in localities generally adjacent to live forested areas. Riverward borrow areas should be dug as deep as possible. Depths of 5 feet or more are preferred. The borrow areas should be constructed so that one side that has a slope of 1V:4H, the other slopes may be as steep as 1V:1.5H. The borrow areas should be allowed to revegetate naturally.

c. Riparian timbered areas with trees greater than 9 inches dbh may be used for borrow if cost effective and if old borrow areas, or wooded areas with trees less than 9 inches dbh, and riverward agricultural fields are not available. When riparian areas are used for borrow, regardless of timber size, they should be dug as deep as possible to minimize the amount of timber clearing. The borrow areas should be constructed so that one side that has a slope of 1V:4H, the other slopes may be as steep as 1V:1.5H. Borrow areas should be

allowed to revegetate through natural succession unless significant mast-producing trees are lost, then replacement plantings will be considered.

d. Levee repairs will be authorized under the 1995 Corps' General Permit (MRKGP-33M) which is currently under preparation (Permanent Protection and/or Repair of Flood Damaged Structures and/or Fills in the state of Missouri). The General Permit is expected to be finalized by early September 1995, i.e., before construction would begin on any levee repairs. Until finalized, any construction work involving waters of the U.S. must be authorized by individual permit. The 1995 General Permit will be in effect for 5 years.

e. Currently, agricultural land wetland delineations are the responsibility of the Natural Resources Conservation Service (NRCS). The Corps is responsible for wetland delineations on non-agricultural lands (e.g., areas that haven't been farmed in 5 years or more). When damage survey reports are complete, the NRCS will be sent aerial photographs with the locations of levee damage shown on them. The NRCS will delineate agricultural wetlands on the photographs. They will also identify any potential conflicts with land enrolled in the Conservation Reserve Program (CRP), Emergency Wetlands Reserve Program (EWRP), Wetlands Reserve Program (WRP), "minimal effects with mitigation", or other U.S. Department of Agriculture Programs. The marked-up photographs and U.S. Department of Agriculture Program information will be provided to the Corps. Final wetland delineations for all utilized agricultural and non-agricultural borrow sites will be drawn on aerial photographs and furnished to the NRCS.

f. Non-agricultural land wetland delineations will be performed by Corps regulatory personnel or field biologists. Off-site wetland screening will be performed using maps, photographs, and historical records to narrow the area of potential wetlands on non-agricultural lands. ~~The findings of this off-site screening will be verified on-site prior to finalizing borrow negotiations.~~ A short on-site observation report documenting the on-site delineations and a photo/map containing wetland delineations for both agricultural and non-agricultural land will be attached to the Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) and/or placed in the official project files. Landowners will be informed by letter if borrow will be taken from a designated wetland and any potential Food Security Act or Swampbuster Program implications of using wetland borrow sites.

Attachment

BORROW SITE SELECTION CRITERIA

The Corps of Engineers has prepared a list of factors to be used in the selection of borrow sites for levee repairs. Please consider these when recommending sites so that approval can be accomplished as quickly as possible.

- Borrow sites consisting of clay, sandy clay and silty loam are the most desirable.
 - Riverward borrow areas located in open agricultural fields will be used when available.
 - Tree clearing, especially involving mature trees, will be avoided. However, areas with small to medium size trees may be used for borrow if riverward agricultural fields are not available. Old borrow sites will also be considered for use. The borrow areas will be dug as deep as possible to minimize tree clearing.
 - Riverward areas which are frequently wet should be avoided because the selection of these areas may result in construction delays. If wet areas are proposed as borrow sites, drier alternate areas should also be proposed. In most cases, special restrictions may apply if borrow areas have been delineated as wetlands.
 - Agricultural lands which are selected for borrow should not be planted to crop, if the crop can not be harvested before construction begins. No compensation for crop damage due to levee repair construction activities will be paid by the Government.
 - Borrow will not be taken within 30 feet of the levee toe unless the borrow is taken to repair minor sidewash and/or topwash.
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- No borrow will be taken within 30 feet of the high bank of the river.
 - Borrow sites should be located within 1,000 feet of the repair. Borrow for minor topwash and sidewash should be within 200 feet adjacent to the levee where the damage has occurred.
 - Borrow and/or construction activity should remain 150 feet away from any visible structure or building remains.
 - Cultural resource surveys will be required where there are known or potential archeological sites.
 - Borrow sites with known or suspected to have hazardous substance contamination will not be considered for use.

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